IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1. (Currently Amended) A learning system comprising:

dialog means for obtaining the name of an object from ~~the~~ a user through a dialog with said user;

plural recognizing means for detecting a plurality of feature data of said object respectively, and for recognizing the ~~above~~ object based on the ~~above~~ detection result and the learning result of said corresponding feature data of a known object previously stored;

storing means for storing relation information, ~~in that~~ said name of said known object is connected with the recognition result of the ~~above~~ known object by each of said recognizing means; and

control means, for determining that ~~if determining that~~ said object is a new object based on the name of said object obtained by said dialog means, the recognition result of the ~~above~~ object by each of said recognizing means, and said relation information stored in said storing means, for making said ~~needed~~ recognizing means perform the learning of said corresponding feature data of the ~~above~~ object, and making said storing means ~~newly~~ store ~~thus obtained~~ the relation information ~~on the above object~~,

wherein said control means manages the learning achievement degrees of said known object by said respective recognizing means, and

wherein if said control means determines that said object is a known object based on the name of said object obtained by said dialog means, the control means makes said predetermined recognizing means perform the learning of said corresponding feature of the object, and updates said corresponding relation information according to the obtained new learning achievement degree.

2. (Canceled)

3. (Currently Amended) The learning system according to claim 1, wherein:[[;]]

each of said recognizing means starts collecting learning data for performing the learning of said corresponding feature of the ~~above~~ object before said dialog means obtains said name of said object, and performs the learning of said corresponding feature of said object with the ~~above~~ collected learning data.

4. (Currently Amended) The learning system according to claim 3, wherein:[[;]]

~~even~~ if each of said recognizing means ~~could~~ does not collect a predetermined amount of said learning data, ~~it~~ the recognizing means performs the learning of said corresponding feature of said object with the ~~above~~ collected learning data.

5. (Currently Amended) The learning system according to claim 1, wherein:[[;]]

if the learning of said corresponding feature of said object is stopped in the middle of the learning, each of said recognizing means stores ~~the above~~ a halfway learning result until that time, and starts the next learning of said corresponding feature of the ~~above~~ object from the ~~above~~ halfway point.

6. (Currently Amended) The learning system according to claim 1, wherein:

~~said object is said user being the other party of the dialog; and~~

if the learning of said user by one or ~~all~~ more of said recognizing means is insufficient, said dialog means executes the processing to prolong the dialog with said user.

7. (Currently Amended) The learning system according to claim 6, wherein:[[;]]

~~to prolong the dialog with said user,~~ said dialog means executes the processing to make a dialog so that said recognizing means is insufficient in the learning of said object ~~easily perform that learning~~.

8. (Currently Amended) The learning system according to ~~claim 2~~ claim 1, wherein:[[;]]

said control means makes said predetermined recognizing means ~~that is determined based on said learning achievement degree of said object by each of said recognizing means~~ start the learning of said corresponding feature of the ~~above~~ object, ~~from the state~~ according to the present learning achievement degree ~~of the above object by the above~~

~~recognizing means~~.

9. (Currently Amended) The learning system according to claim 8, wherein:

~~said control means makes~~ said storing means stores data for the present learning achievement degree ~~by each of said recognizing means~~, and manages the learning achievement degrees.[[;]] ~~and~~

~~said control means or said storing means performs time attenuation to said learning achievement degrees.~~

10. (Currently Amended) A learning method comprising:

~~the first step for~~ obtaining ~~the~~ a name of an object from ~~the~~ a user through a dialog with said user;[[,]] ~~and for~~

recognizing the ~~above~~ object based on ~~the~~ a detection result of a plurality of feature data of said object and ~~the~~ a learning results of ~~said respective~~ features of said known object previously stored; ~~and~~

~~the second step, if it is determined that~~ determining whether said object is a new object based on the obtained name of said object, the recognition results based on said respective feature data of the ~~above~~ object, and relation information ~~in that said name of said known object~~ that is connected with the recognition results of said ~~respective~~ feature data of the ~~above~~ known object;[[,]] ~~for~~

performing the learning of said ~~needed~~ feature data; ~~of the above object~~[[,]] ~~and newly~~

storing ~~thus~~ the obtained relation information ~~on the above object~~;

managing the learning achievement degrees of said respective features;

determining whether said object is a known object based on the obtained name of said object, if so, the recognition results of said respective features of the object, and said stored relation information, the learning of said predetermined feature determined based on said learning achievement degrees of said respective features of the object is performed; and

updating the corresponding relation information according to the obtained new learning achievement degree.

11. (Canceled)

12. (Currently Amended) The learning method according to claim 10, wherein:

~~in said first step,~~ collecting learning data for performing the learning of said respective features of the ~~above~~ object is started before said name of said object is obtained; and

~~in said second step,~~ the learning of said respective features of said object is performed with the ~~above~~ collected learning data.

13. (Currently Amended) The learning method according to claim 12, wherein:[[;]]

~~in said second step, even~~ if a predetermined amount of said learning data ~~could~~ is not ~~be~~ collected, the learning of said corresponding feature of said object is performed with the ~~above~~ collected learning data.

14. (Currently Amended) The learning method according to claim 10, wherein:

~~in said second step,~~ if the learning of said corresponding feature of said object is stopped ~~in the middle of~~ during the learning, the ~~above~~ halfway learning result ~~until that time~~ is stored; and

~~the next~~ additional learning of said corresponding feature of the ~~above~~ object is started from the ~~above~~ halfway point.

15. (Currently Amended) The learning method according to claim 10, wherein:

~~said object is said user being the other party of the dialog; and~~

~~in said second step,~~ if the learning of one or ~~all~~ more of said features of said user is insufficient, the processing to prolong the dialog with said user is performed.

16. (Currently Amended) The learning method according to claim 15, wherein:[[;]]

to prolong the dialog with said user, the processing to make a dialog so that the learning of said feature, insufficient in the learning, of said object ~~can be easily~~ is performed.

17. (Currently Amended) The learning method according to ~~claim 11~~ claim 10, wherein:

~~in said second step,~~ the learning of said predetermined feature of said object determined based on said learning achievement degrees of said ~~respective~~ features of said object

is started from the state according to the present learning achievement degree of the ~~above~~ feature.

18. (Currently Amended) The learning method according to ~~claim 11~~ claim 10, wherein:[[;]]

time attenuation is performed to said learning achievement degrees.

19. (Currently Amended) A robot apparatus comprising:

dialog means for obtaining ~~the~~ a name of an object from ~~the~~ a user through a dialog with said user;

plural recognizing means for detecting ~~the~~ one or more predetermined different features of said object ~~respectively~~, and for recognizing the ~~above~~ object based on the ~~above~~ detection result and the learning result of said corresponding feature of said known object previously stored;

storing means for storing relation information ~~in that said name of~~ such that said known object is connected with the recognition result of the ~~above~~ known object by each of said recognizing means; and

control means~~, if~~ for determining that said object is a new object based on the name of said object obtained by said dialog means, the recognition result of the ~~above~~ object by each of said recognizing means, and said relation information stored in said storing means, ~~for making said needed recognizing means perform the~~ learning ~~of~~ said corresponding feature of the ~~above~~ object, and ~~making said storing means newly store thus obtained~~ storing relation information on the ~~above~~ object.

wherein said control means manages the learning achievement degrees of said known object by said recognizing means, and

wherein if said control means determines that said object is a known object based on the name of said object obtained by said dialog means, the recognition results of the object by said recognizing means, and said relation information stored in said storing means, the recognizing means perform the learning of said corresponding feature of the object, and updates said corresponding relation information according to obtained new learning achievement degree.

20. (Canceled)

21. (Currently Amended) The robot apparatus according to claim 19, wherein:[[;]]

each of said recognizing means ~~starts collecting~~ collects learning data for performing the learning of said corresponding feature of the ~~above~~ object before said dialog means obtains said name of said object, and performs the learning of said corresponding feature of said object with the ~~above~~ collected learning data.

22. (Currently Amended) The robot apparatus according to claim 21, wherein:[[;]]

~~even if each of~~ when said recognizing means ~~could~~ does not collect a predetermined amount of said learning data, ~~it~~ the recognizing means performs the learning of

said corresponding feature of said object with the ~~above~~ collected learning data.

23. (Currently Amended) The robot apparatus according to claim 19, wherein:[[;]]

~~if~~ when the learning of said corresponding feature of said object is stopped during ~~in the middle of the~~ learning, each of said recognizing means stores ~~the above~~ a halfway learning result until that time, and starts the next learning of said corresponding feature of the ~~above~~ object from the ~~above~~ halfway point.

24. (Currently Amended) The robot apparatus according to claim 19, wherein:

~~said object is said user being the other party of the dialog; and~~

if the learning of said user by one or all of said recognizing means is insufficient, said dialog means executes the processing to prolong the dialog with said user.

25. (Currently Amended) The robot apparatus according to claim 24, wherein:[[;]]

~~to prolong the dialog with said user,~~ said dialog means executes the processing to make a dialog so that said recognizing means insufficient in the learning of said object easily perform that learning.

26. (Currently Amended) The robot apparatus according to ~~claim 20~~ claim 19, wherein:[[;]]

~~said control means makes said predetermined recognizing means that is determined based on said learning achievement degree of said object by each of~~ said recognizing means start the learning of said corresponding feature of the ~~above~~ object, from the state according to ~~the~~ a present learning achievement degree of the ~~above~~ object by the ~~above~~ recognizing means.

27. (Currently Amended) The robot apparatus according to claim 26, wherein:

~~said control means makes~~ said storing means stores data for the present learning achievement degree by each of said recognizing means, and manages the learning achievement degrees; and

said control means or said storing means performs time attenuation to said learning achievement degrees.